

DOCUMENT RESUME

ED 251 656

CE 040 261

TITLE Masonry. Progress Record, Theory Outline.
 INSTITUTION Connecticut State Dept. of Education, Hartford. Div. of Vocational-Technical Schools.
 PUB DATE Sep 83
 NOTE 34p.; For related documents, see CE 040 262.
 PUB TYPE Guides - Classroom Use - Guides (For Teachers) (052)

EDRS PRICE MF01/PC02 Plus Postage.
 DESCRIPTORS Behavioral Objectives; *Building Trades; Course Content; Course Descriptions; High Schools; Industrial Arts; *Job Performance; Job Skills; *Masonry; Recordkeeping; Safety; *School Shops; Secondary Education; Student Evaluation; *Student Records; *Trade and Industrial Education

ABSTRACT

Intended to reduce unnecessary paper work on the part of the shop instructor in a masonry course, this job assignment book offers a simplified method of keeping student records up-to-date. It lists theory objectives and specific objectives for masonry courses in grades 10, 11, and 12. To help the instructor in planning and organizing in advance, a theory outline is offered that covers 19 topics, including introduction, occupational safety, masonry materials, masonry tools, layout, masonry walls, bonds and patterns, solar construction, reinforced masonry construction, arch construction, fireplace construction, masonry estimating, lintel and beam installation, door and window frames, repair and maintenance, and customer relations. Space is provided for each topic to indicate lesson plan number and dates scheduled, presented, and tested. Other contents include instructions for recording student progress on the shop progress records; a record/form with areas for student name, tool check number, locker number, and text number, and grades; and shop progress records. The shop progress records identify the operations/skills that the student in a masonry course is expected to learn and provide a space in which the instructor records student progress as (1) instructed, (2) practiced, or (3) proficient.
 (YLB)

 * Reproductions supplied by EDRS are the best that can be made *
 * from the original document. *

MASONRY
DIVISION OF VOCATIONAL-TECHNICAL SCHOOLS

Prepared for

Connecticut State Department of Education
Division of Vocational and Adult Education
Bureau of Vocational Program Planning and Development
Hartford, Connecticut 06115

This project was supported by funds made available
To Connecticut through the Vocational Education
Act of 1976, Public-Law 94-482.

1983

9/83

3

MASONRY

Progress Record, Theory Outline

SCHOOL _____

SHOP _____

INSTRUCTOR _____ YEAR _____ GRADE _____

INSTRUCTOR _____ YEAR _____ GRADE _____

INSTRUCTOR _____ YEAR _____ GRADE _____

INSTRUCTOR _____ YEAR _____ GRADE _____

CONNECTICUT STATE DEPARTMENT OF EDUCATION
DIVISION OF VOCATIONAL TECHNICAL SCHOOLS
HARTFORD, CONNECTICUT

1983

9/83

4

PREFACE

The objective of this Job Assignment Book is to reduce unnecessary paper work on the part of the shop instructor.

This Job Assignment Book will simplify the instructor's task of keeping student records up-to-date.

In shops doing production work, it is necessary to devise flexible daily lesson plans well in advance. This Job Assignment Book will help the instructor in planning and organizing considerably in advance, thereby increasing his/her instructional efficiency.

Please note that the book is not designed simply for planning. It has areas for locker, text assignments, notes, grades, shop progress records, daily attendance, etc.

Students' names are entered only once for the entire course.

THEORY OBJECTIVES

1. To provide the student with current related technical information.
2. To provide the student with the information necessary to perform jobs in an orderly and organized manner.
3. To provide the students with the information which will enable them to make correct judgments as related to solving job problems.
4. To provide the student with the information that is necessary to achieve desirable work habits, self-confidence and motivation.

MASONRY COURSE SPECIFIC OBJECTIVES

Upon completion of each grade level the student should be able to:

GRADE 10

1. Be safety conscious and use safe work practices at all times.
2. List and identify the most often used tools of the masonry trade.
3. Use the essential measuring tools of the masonry trade.
4. Mix and spread mortar.
5. Lay brick to a line.
6. Build shop projects in a workshop like manner.

GRADE 11

1. Be safety conscious and use safe work practices at all times.
2. Lay brick and block true to a line and accurately plumb, level and range masonry projects.
3. Maintain accurate heights while building leads.
4. Understand and apply basic theory related to the masonry trade.
5. Perform manipulative skills common to the masonry trade.
6. Build at least four types of arches.

GRADE 12

1. Be safety conscious and use safe work practices at all times.
2. Understand and apply basic theory related to the masonry trade.
3. Be able to solve job problems relating to masonry principles and materials.
4. Interpret and use working drawings to layout masonry work.
5. Build a complete fireplace.
6. Estimate material quantities and labor costs for small jobs.

MASONRY THEORY INDEX

- I. Introduction**
- II. Occupational Safety**
- III. Masonry Materials**
- IV. Masonry Tools**
- V. Layout**
- VI. Masonry Wall Construction**
- VII. Bonds and Patterns**
- VIII. Solar Construction**
- IX. Reinforced Masonry Construction**
- X. Arch Construction**
- XI. Fireplace Construction**
- XII. Outdoor Bar-B-Que Construction**
- XIII. Heatilator Construction and Installation**
- XIV. Masonry Estimating and Shop Blue Print Reading**
- XV. Lintel and Beam Installation**
- XVI. Door and Window Frames**
- XVII. Repair and Maintenance**
- XVIII. Miscellaneous Assignments**

I. INTRODUCTION

1. Orientation
 - a. Shop Rules
 - b. Shop facility
 - c. Shop equipment
 - d. History of trade
 - e. Trade
2. Opportunities
 - a. Working for union contractors
 - b. Working for non-union (open shop) contractors
 - c. Self-employed

II. OCCUPATIONAL SAFETY

1. Safety Precautions
 - a. Safe working conditions
 - b. Unsafe conditions
 - c. Unsafe acts
2. Safety Laws
 - a. Employees responsibilities
 - b. Employers responsibilities
3. Protective Clothing and Equipment
 - a. Shoes
 - b. Hats
 - c. Eye protection
 - d. Hearing protection
 - e. Respirators
4. Working, walking and climbing surfaces
 - a. Stairs
 - b. Ramps
 - c. Ladders
 - d. Staging and Protective Rails
 - e. General housecleaning
 - f. Lifting and carrying
 - g. Color Coding
 - h. Fires
 - i. Work station

LESSON PLAN NO.	DATE SCHEDULED	DATE PRESENTED	DATED TESTED

III. MASONRY MATERIALS

1. Construction Procedures and Application

- a. Brick
- b. Concrete Masonry Units (specials)
- c. Block
- d. Glazed Tile
- e. Glass Block
- f. Stone
 - 1. cut stone
 - 2. field stone
 - 3. decorating stone
 - 4. slate
- g. Ceramic tile
- h. Plastering materials
- i. Concrete

IV. MASONRY TOOLS

- A. Trowels
- B. Hammers
- C. Chisels
- D. Sets
- E. Rules - spacing and modular
- F. Lines
- G. Corner blocks - line pins - trigs
- H. Levels
- I. Story poles
- J. Jointers - flat, round, rakers

V. LAYOUT

- A. Ruler and tape reading
- B. Squaring
- C. Leveling
- D. Builders Level
- E. Bench Marks
 - 1. Heights
- F. Bording
- G. Story Pole
 - 1. Making
 - 2. Using

LESSON PLAN NO.	DATE SCHEDULED	DATE PRESENTED	DATED TESTED

LESSON PLAN NO.	
DATE SCHEDULED	
DATE PRESENTED	
DATED TESTED	

- ## VII. BONDS AND PATTERNS

- ## VIII. SOLAR CONSTRUCTION

- A. Heating
- B. Cooling
- C. Insulation
- D. Principles of Convection and Radiation
- E. Trombe Wall
- F. Concrete Eall
- G. Fireplace Chimney Heat Sink
- H. Shapes and Colors of Masonry Units
- I. Tile, Concrete and Brick Floors
- J. Orientation to the sun
- K. Above Grade Building
- L. Berm Construction
- M. Subterranean Construction

IX. REINFORCED MASONRY Construction

- A. Materials**
1. Steel
 2. Brick - Concrete Masonry Units
 3. Martar
 4. Grout

	LESSON PLAN NO.
	DATE SCHEDULED
	DATE PRESENTED
	DATED TESTED

1. Size

2. Width

3. Style

a. poker control

b. rotary control

c. multi-opening

1. Minimum depth

2. Function

1. Targeting

2. Float smooth

3. Function

1. Correct size

2. Proper location

3. Proper installation

1. Length

2. Thickness

3. Function

1. Location

2. Function

1. Location

2. Size

3. Function

1. Location

2. Function

3. Partitions

1. Location

2. Size

3. Function

XI. FIREPLACE CONSTRUCTION (Continued)

O. Mantels

1. Wood
2. Brick
3. Stone

XII. OUT DOOR BAR-B-QUE CONSTRUCTION

A. Types

B. Plans

1. Fire Box
2. Grills
3. Foundation
4. Chimneys

XIII. HEATILATOR CONSTRUCTION AND INSTALLATION

A. History

B. Planning

C. Economy

D. Insulation

E. Air Circulation

1. Air Intake
2. Warm Air Exhaust

A. Hearth

B. Exhaust

1. Intake
2. Exhaust

A. Flue Size

XIV. MASONRY ESTIMATING AND SHOP BLUE PRINT READING

A. Working Drawings

1. Sections
2. Elevations
3. Plans
4. Details
5. Scales

B. Estimating Materials

1. Square Foot Method
2. Linear Foot Method

LESSON PLAN NO.	DATE SCHEDULED	DATE PRESENTED	DATE TESTED

LESSON PLAN NO.	DATE SCHEDULED	DATE PRESENTED	DATED TESTED

1. Unit Price

2. Units Per Day

1. Forklift rental

2. Staging rental

XV. LINTEL AND BEAM INSTALLATION

1. Length (Bearing)

2. Strength

a. Back to Back

b. Welded

c. Thickness

1. Precast

2. Cast in Place

1. Welded Wide Flange

2. Channel Iron

A. Door Frame

1. Steel

2. Flush

3. Wrap Around

4. Spreaders

5. Assembly

6. Masonry Opening

1. Steel

2. Aluminum

3. Wood

4. Masonry Opening

5. Lintel Placement

XIX. CUSTOMER RELATIONS (Continued)

2. Association in Person

- a. Call customer by name
- b. Pronounce name correctly
- c. Efficient service
- d. Brief, thorough
- e. Satisfy complaints
- f. Enthusiasm about company
- g. Enthusiasm about product

C. Customer Psychology

- 1. Get the customer's story
- 2. Agreement precedes disagreement
- 3. Knowledge of product
- 4. Ignorance kills customer confidence
- 5. Show initiative

D. Business Practices

- 1. Maintain good records
 - a. Customer files
 - b. Service calls
 - c. Time spent
- d. Parts used
- e. Billings
- f. Correspondence
- g. Inventory
- h. Service bulletins
- i. Cost (all taxes)
- j. Taxes (all taxes)
- k. Gross income
- l. Net profit

E. Ethics

- 1. Workmanship
- 2. Parts Cost
- 3. Labor cost
- 4. Overhead cost
- 5. Promptness
- 6. Contractual and implied obligations
- 7. Customer consideration

LESSON PLAN NO.	DATE SCHEDULED	DATE PRESENTED	DATE TESTED

RECORDING STUDENT PROGRESS

A major principle of vocational education is that the students learn skills or the performance of operations of a trade with the production job as a vehicle to accomplish this objective.

The operations are defined on the shop progress record and it is imperative that the instructor have some means of recording the student experiences and achievement.

The approved method of recording student progress is as follows:



Instructed - This designation on the progress record indicates that the student has performed a skill with the assistance of and under the supervision of the instructor.



Practiced - This designation on the progress records indicates that the student has performed a skill either by himself or with little help from the instructor.



Proficient - This designation on the progress record indicates that the student is capable of performing a skill by himself within a reasonable amount of time with no assistance from the instructor. In effect this implies that the student has been tested for the skill.

This method of noting student progress will define accurately student achievement and in fact will point out any weaknesses the student may have in certain operations; thus highlighting areas where the student may need help.

Grades should be kept on student daily progress cards or in roll books.

Grade

Year

Instructor[illegible]

BLOCK CORNERS

BLOCK WALLS

[illegible]

11

ARCH CONSTRUCTION

WASHING AND CLEANING

[illegible]

JOINTING

REINFORCED MASONRY

[illegible]

MORTAR

BRICK

[illegible]

[illegible]

• • •

•

•

•

REPAIR AND MAINTENANCE

MISCELLANEOUS ASSIGNMENTS

[illegible]

HEATILATOR

DOOR AND WINDOW FRAMES

[illegible]

COMPOSITE WALLS

OUTDOOR BAR-B-QUE

[illegible]

[illegible]

4 1 1 1

CHIMNEY

MASONRY SAW

[illegible]

• • • • •

